

BETEKHTIN, A.G.; VOL'PSON, F.I.; GENKIN, A.D.; DUBROVSKIY, V.N.; YEROFEEV,  
B.N.; KONSTANTINOV, R.M.; MATERIKOV, M.P.; SOKOLOV, G.A.; STRAKHOV,  
N.M.; TATARINOV, P.M.; TOMSON, I.N.; SHADLUN, T.N.; SHATALOV, Ye.T.;  
SHIPULIN, F.K.

Oleg Dmitrievich Levitskii; obituary. Geol. rud. mestorozh. no.2:  
3-6 Mr-Ap '61. (MIRA 12:5)  
(Levitskii, Oleg Dmitrievich, 1909-1961)

YKROFENYEV, B.N. (Chita, Khabarovskaya ul., d.2-A, kv.24)

**Tomographic examination in the diagnosis of osteomyelitis. Vest. rent.**  
1 rad. 34 no.4:37-39 JI-Ag '99. (MIRA 12:12)

1. Iz kafedry radiologii i rentgenologii (zav. - prof. P.D. Yal'tsev [deceased] i kafedry obshchey i gospital'noy khirurgii sanitarno-gigiyenicheskogo fakul'teta (nauchnyy rukovoditel' - prof. P.I. Sapozhkov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.  
(OSTEOMYELITIS radiography)

YEROFEEV, B. N.

Organization of the teaching of roentgenology and radiology.  
Med. rad. no.12:61-63 '61. (MIRA 15:7)

1. Is Chitinskogo meditsinskogo instituta.

(RADIOLOGY, MEDICAL STUDY AND TEACHING)

2

CA

Classification of the promoting action of iron oxides in catalysis. N. I. Kabanov, B. V. Makhov, I. M. Kaverin and A. M. Bogoyavlenskaya. *Ukrainian Physicochem. J.*, 7, 3, 3, 489-52 (1964) (in English). The promoting action of  $Al_2O_3$  and  $MgO$  on  $FeO$  was studied from the viewpoint of mixed crystals between the promoter and the initial Fe oxide. The formation of mixed crystals in itself is sufficient to cause the promoting action. It was proposed that it was necessary for a promoter to be surface-active with regard to the initial mass of the catalyst. A pronounced difference between the surface tension of  $Fe_2O_3$  and  $Fe_2O_3 + Al_2O_3$  and an absence of such a difference between  $Fe_2O_3$  and  $Fe_2O_3 + MgO$  as confirmed by the catalytic activity of Fe reduced from these oxides was amply shown.

M. H. Rikhsy

1ST AND 2ND COLUMNS		PROCESS AND PROPERTIES INDEX	
CA			2
<p>The hydrogenation of aluminum nitride by active hydrogen. N. I. Kabanov, B. V. Kiselev and V. M. Savvin. (Zhurn. fiz. i khim. U. S. S. R. [M. S.], 2, 280-82 (1955) (in Russian).--Al nitride (made by passing <math>NH_3</math> over heated Al at 800-900° and using 27-33% AlN) was placed in a U-shaped quartz discharge tube and <math>H_2</math>, or <math>H_2</math> and <math>N_2</math> (1:1) at 1-6 mm. pressure was passed over it while an elec. discharge of 0.05 amp. was passing through the tube. During the exp. the tube was kept in liquid air to condense the <math>NH_3</math> formed. In every case <math>NH_3</math> was formed and at the same time an AlN, was formed that was at least partly volatile even in liquid air. Because of this the N content of the impure nitride increased during the exp. in spite of the <math>NH_3</math> that was formed. It also prevented the formation of a coating of Al over the AlN that would stop the formation of <math>NH_3</math>. The amt. of <math>NH_3</math> formed varied but in some cases amounted, in an hr., to about 10% of the N, in the AlN. The activated H<sub>2</sub> was in the at. form because the hydrogenation was most rapid when the discharge had the color of the spectrum line of H.</p> <p style="text-align: right;">John E. Mithery</p>			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>22000 51000000</p>			
<p>100000 00</p>			
<p>00000 00</p>			

137 AND 139 SHEETS		PROCEDURES AND EXPERIMENTAL DATA	
CA		<p>A new method for investigating catalyst surfaces. N. N. Kiselev and K. M. Mikhalev. <i>Acta Physicochim. U. R. S. S. R.</i> 4, 886-890 (1968) (in English). The method is based on the fact that the elec. resistance of metallic films placed in a glass tube between 2 electrodes is highly decreased under the influence of a p. d. between the electrodes induced by radio waves. It is on this principle that the arrangement of cathodes used in radio vacuum sets is based. After pure Fe films in a glass tube were reduced in <math>H_2</math> at <math>480^\circ</math> to remove surface oxide films, the resistance of the films at room temp. fell from an immeasurably high value to a few ohms and did not change under the action of electromagnetic radiation sent by a Marx vibrator. The admission of air to the tube increased their resistance up to some thousand ohms and the tube recovered its lost capacity of acting as a cathode. The exp. was repeated; on Fe <math>FeO</math>-catalyst with 1% <math>Al_2O_3</math> as a promoter was used. In spite of pronounced reduction at <math>480^\circ</math>, this catalyst retained its capacity of acting as a cathode. Such a result shows that at the surface of a promoted Fe catalyst there is a film of adsorbed <math>Al_2O_3</math> which cannot be reduced under the exp. conditions. N. N. Kiselev</p>	
<p>ASD-51A METALLURGICAL LITERATURE CLASSIFICATION</p>			
SOURCE #2		COLLECTION	
137 AND 139 SHEETS		137 AND 139 SHEETS	

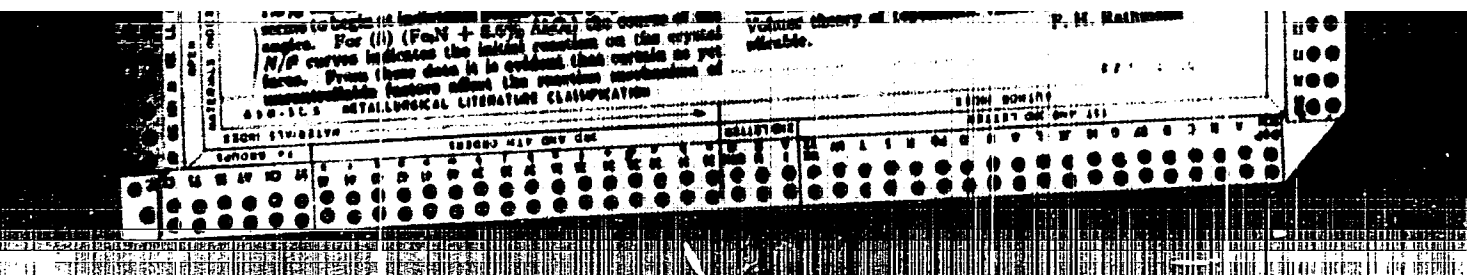
9. Reactions with particles of solid substances. I. Kinetics of the reaction in polycrystalline substances. H. V. Kridner, *J. Phys. Chem.* (U. S. S. R.), **9**, 826-83 (1967).—Theoretical-mathematical. Six possible cases of the kinetics of a reaction involving one solid cubic component are considered and simple equations derived to express the relation between substance reacted and the time. These equations are then generalized for any kind of geometrically shaped body. F. H. Mathmann

ASAC. 52.2 METALLURGICAL LITERATURE CLASSIFICATION

117 200 1 200119  
 KINETICS AND MECHANISM OF THE  
 Reaction of reaction with the participation of solid sub-  
 stance. II. Investigation of the kinetics of reduction of  
 iron oxides by hydrogen. 1. G. A. Kozlov, V. K.  
 Ivanov, A. B. Kovaleva, and K. P. Kozlov. Zh.  
 Fiz. Khim. (U.S.S.R.) 12, 120-125 (1938); C. C. A. 31.  
 Data on the hydrogenation by Fe or Fe<sub>2</sub>O<sub>3</sub> under  
 at temps. from 200° to 300° at 7 different iron oxides curve  
 showing roughly to the contrary. Fe<sub>2</sub>O<sub>3</sub> and Fe<sub>3</sub>O<sub>4</sub> variously  
 treated (as with Fe<sub>2</sub>O<sub>3</sub>, etc.) are shown. The nature of  
 the reaction is indicated by plotting the temper-  
 ature  $\ln k$  vs  $1/T$  or  $1/T^2$  to linear or non-

linear graphs. Cf. Kozlov and Levin, C. A. 32.  
 Investigation of the kinetics of reduction of  
 iron oxides. 2. Ibid. 200-201 (1938). With the same  
 Fe oxides system, used in the preceding article, the prob-  
 ability of initiation of the reaction and the lower rate of  
 initiation of initiation of the reaction and the lower rate of  
 its propagation were found. While Al<sub>2</sub>O<sub>3</sub> shows no specific  
 accelerating effect on the hydrogenation process, Fe<sub>2</sub>O<sub>3</sub> shows  
 a strongly neg. effect. The pos. catalytic effect of Fe<sub>2</sub>O<sub>3</sub>  
 in Al<sub>2</sub>O<sub>3</sub>-Fe<sub>2</sub>O<sub>3</sub> systems is due to a reduction in the surface area of the oxides. The nature of the  
 reaction is indicated by plotting the temper-  
 ature  $\ln k$  vs  $1/T$  or  $1/T^2$  to linear or non-





**ABC**

**Kinetics of reactions in which solid particulate.** IV. Thermal decomposition of mercuric oxide. B. V. Konozy and K. I. Tsvetova (J. Phys. Chem. Russ., 1939, 12, 244-260; cf. A., 1939, 1, 423).—The decomp. at 430-500° is autocatalyzed by the Hg formed, apparently through this being adsorbed on the surface of the HgO and creating a configuration facilitating reaction; Hg added to the system has no catalytic action. Different samples of Hg very considerably in reactivity. Reaction starts on the edges of the crystals, but is often accelerated by sintering. The energy of activation of the decomp. is 87,000 g.-cal. R. C.

13. 4%



YEROFEEV, B. V.

"On the Kinetic and Catalytic Reduction of Carbon Monoxide to a Carbohydrate by the use of Hydrogen over a Cobalt-Thorium Catalyst." Acta Phys Vol. XIII No. 1, 1940, Chem inst. White Russian Acad. of Sci. Minsk.

YEROFEYEV, B.V.

USSR

"Some Problems of Topokinetics."

Zhurn. Fiz. Khim., Vol. 14, No. 9-10-, 1940.

Oct 22 1951

BC

A-1

**Hydrogenation.** A. A. Reznicek, S. V. Ruzhany, K. A. Nisenzon, and M. S. Shostakovskiy, *J. Gen. Chem. USSR*, 1961, 11, 877-881. When  $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$  (in  $\text{NiCl}_2$  solution) reacts with  $\text{MgPhH}_2$  in  $\text{Et}_2\text{O}$ ,  $\text{C}_6\text{H}_6$ , or  $\text{THF}$  in a 1:1 ratio, 6-18 mole. of  $\text{H}_2$  are absorbed for 1 mole. of  $\text{NiCl}_2$ . The low absorption is due to formation of  $\text{NiH}_2$ , and the high absorption to absorption of  $\text{H}_2$  in the  $\text{Ni}$  hydride suspension and, to a large extent, to hydrogenation of the aromatic solvent or of the dimeric products of  $\text{MgPhH}_2$ . The hydrogenated products have been isolated but not identified. When  $\text{NiCl}_2$  reacts with  $\text{Mg}$  (methyl) bromide in  $\text{Et}_2\text{O}$  or  $\text{THF}$ , the amount of  $\text{H}_2$  absorbed is 3.7-4.7 mole. Thermal analysis of  $\text{Ni}$  hydride from these solutions shows it to be  $\text{NiH}_2$ ; earlier investigators found  $\text{NiH}$ ,

since they decomposed it by acids and induced hydrogenation of  $\text{C}_6\text{H}_6$  by  $\text{NiH}$ . The rate of absorption of  $\text{H}_2$  by  $\text{NiH}_2$ - $\text{MgPhH}_2$  solutions is partly reversible but usually shows a min. after 2-3 mole. of  $\text{H}_2$  and a max. after 5-6 mole. have been absorbed. In some cases a min. of the absorption of 1 M indicating a hydride  $\text{NiH}$ . The composition of the stable hydride ( $\text{NiH}_2$ ) is independent of temp. (10-50°) but  $\alpha$  is lower at higher temp. If  $\alpha$  is high, the total amount of  $\text{H}_2$  absorbed is also high. As formation of  $\text{NiH}_2$  can take place without hydrogenation but no hydrogenation occurs without formation of  $\text{NiH}_2$ , the hydrogenation appears to be more sensitive to poisons than is the synthesis of hydride. Thiophene stops the absorption of  $\text{H}_2$  altogether. The  $\text{NiH}_2$  formed in  $\text{Et}_2\text{O}$  remains in colloidal solution when  $[\text{MgPhH}_2]$  is  $> 0.5$  mol. and precipitates when  $[\text{MgPhH}_2]$  is  $< 0.5$  mol.; the excess of  $\text{MgPhH}_2$  functions as a protective colloid. J. J. H.

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

EROFEEV, B. V.

"Topochemical factors in the formation of the hydrides of nickel." Balandin, A. A., and  
Erofeev, B. V. (p. 170)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1942, Vol 12, No 3-4.

**Competition and mechanism of formation of the hydride of Ni.** I. Comparison of the hydride of Ni. A. A. Saksel'skiy, R. V. Kuznetsov, L. A. Perharshina and M. S. Mikhomirov. *Ann. Khim. Akad. Nauk SSSR*, 1978, 157-161 (1968) (in English); *J. C. S. D.*, 1978, —. Under the usual conditions described by Fehlebrand, *et al.* (C. A. B. 19, 307) the hydride of Ni formed has the same NiH, rather than NiH<sub>2</sub>. NiH<sub>2</sub> was proved by liberation of NiCl<sub>2</sub>. If H<sub>2</sub> gas, and *Co* catalyst dissolved in H<sub>2</sub>O, *SnCl*<sub>4</sub>, *CoCl*<sub>2</sub>, talcose or *yttrium* in a H<sub>2</sub> stream. It was analyzed by thermal desorption. In Ni and H<sub>2</sub>, NiH<sub>2</sub> is formed as an intermediate product and strongly catalyzes the hydrogenation of *Co* and *yttrium*. P. H. Maitland

**F.H. Halberstadt**

**CIA-RDP86-00513R001962820015-7"**







17

Kinetics of the thermal decomposition of silver azido.  
 B. V. Kuvshinov, P. I. Mel'nikov, and A. A. Vukobrat (Inst.  
 of Chem., Acad. Sci. Belorussian SSR, J. Phys. Chem.  
 (U.S.S.R.) 35, 1408-12 (1961) (in Russian). The progress  
 of the reaction  $\text{Ag}(\text{N}_3)_2 \rightarrow \text{Ag} + 2\text{N}_2$  in darkness was  
 followed by gas-pressure measurements. The rate of the  
 reaction was smaller the older the specimens (2-30 days).  
 In a given sample,  $\theta$  increased to a max. within 30 min. at  
 125°, and 175° resp. at 110° and then decreased to zero  
 within 2 or more hrs. If the heating was interrupted for  
 30-60 min., a second heating resulted in  $\theta$  values as if no  
 interruption had occurred; thus, the decompos. of  $\text{Ag}(\text{N}_3)_2$   
 is not a chain process. The gradual destruction of  
 the decompos. must be due to the catalytic effect of Ag.  
 This explanation agrees with the observation that for the  
 first 20-30% of the decompos. the fraction decomposed,  $\alpha$ , is  
 given by the equation  $\ln(1-\alpha) = -k\theta$ ,  $\theta$  being time  
 and  $k$  and  $\alpha$  constants.  $\alpha$  is 4 to 5 (cf. B. Comp. rend. acad.  
 sci. (U.S.S.R.) 35, 441-44 (1960)). The no. of cations in  
 the original surface of Ag crystals is one. From the in-  
 crease of  $\theta$  at higher temp. an energy of activation of 125,  
 175 cal. is calcd.  
 J. J. Kuvshinov

158-114 METALLURGICAL LITERATURE CLASSIFICATION

EXPT. TECH. 158-114

GENERALIZED EQUATION OF CHEMICAL KINETICS AND ITS APPLICATION IN REACTIONS INVOLVING SOLIDS		PROPERTIES AND PROPERTIES INDEX	
<p>Generalized equation of chemical kinetics and its application in reactions involving solids. (Inst. Chem., Minsh). Comp. rend. acad. sci. U.R.S.S. 52, 811-14 (1946) (in English). -- Theoretical. H. O. Wieg. Kinetics of heterogeneous exchange reactions. I. Study of solid reactions by means of isotopic exchange. Karl Hark Kriess (Inst. Chemistry, Technical, Chalmers Inst. Technology, Sweden). Arkiv Kemi, Mineral, (and. 226, No. 18, 1-20 (1946) (in German); cf. C.A.B. 1946, 1946. -- The general features of heterogeneous reactions, in which isotopic atoms are involved, are outlined. The following 3 steps are then considered in greater detail: (1) diffusion through the surrounding solid, or gas medium to the solid surface, (2) the chem. exchange in the boundary layer, (3) diffusion into the interior of the solid phase.</p> <p>A. Vamliach</p>		<p>2</p>	
<p>ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>CLASSIFICATION</p>			

EROFEEV, B. V.

25383. EROFEEV, B.V.

O Reaktsii E. I. Orlova. (Reaktsiya sintezavysshikh uglevodorodov iz okisi ugleroda i vodoroda). Uspekhi khimii, 1948, Vyp. 3, s. 370-71. - Bibliogr: S. 371

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

YEROFEEV, B. V.

Bel'kevich, P. I., Volkova, A. A., and Yerofeyev, B. V. "The kinetics of the thermal disintegration of stable solutions of silver oxalate and sodium oxalate", Izvestiya Akad. nauk, BSSR, 1948, No. 6, p. 145-59.

SO: U-3261, 10 April 55, (Leto is 'Zhurnal 'nykh Statey, No. 11, 1949).

YEROFEYEV, B. V.

YEROFEYEV, B. V. "Successes in investigations of chemical kinetics and catalysis during 30 years of Soviet power", In the collection: Materialy noyabr'skoy sessii Akad. nauk BSSR, 1947, Minsk, 1949, p. 107-15.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

YEROFEEV, Boris Vasil'yevich

"Successes in the Field of Topokinetics," Izvestiya Akademii Nauk Belorusskoy SSR, 1950, No. 4

SO: Bol'shaya Sovetskaya Entsiklopediya, 2nd edition, Vol. XV, Moscow, 1949



CA

2

Kinetics of consecutive irreversible reactions of the  
first order. S. V. Golovinski (Inst. Chem., Moscow). *Russ.  
J. Phys. Chem.* 55, 1981 (1981). —A rigorous math. deriva-  
tion using the methods of statistical mechanics and deter-  
minants. — Paul W. Flory

EROFEEV, B. V.

Kinetics of transformations of polymorphous modifications of ammonium nitrate.

I. General character of the kinetics of transformation of the modification IV. into the modification III. B. V. Erofeev and N. I. Mitshevich. Page 1235.

Academy of Sci. Belor. SSR  
Inst. of Chemistry  
Minsk  
March 6, 1950.

SO: Journal of Physical Chemistry, Vol. 74, No. 10, October 1950

YEROFYEV, B.V.

BEL'KOVICH, P.I.; VOLKOVA, A.A.; YEROFYEV, B.V.; LAZAREV, M.Ya.

Effect of concentration on the velocity of thermal decomposition  
of silver oxalate in a vehicle. Izv. AN BSSR no.1:163-175 Ja-P '51.  
(Thermochemistry) (Silver oxalate) (MLRA 8:10)

YEROFEYEV, B. V.

PA 192T43

USSR/Chemistry - Oxidants

Page 51

"Kinetics of Reactions Taking Place Under Participation of Solid Substances. Applicability of the Generalized Equation of Chemical Kinetics to the Thermal Decomposition of Potassium Permanganate," B. V. Yerofeev, I. I. Smirnova

"Zhur Fiz Khim, Vol XIV, No 9, pp 1098-1102

Investigated kinetics of thermal decomps of unre-crystd  $\text{KMnO}_4$  at  $218^\circ$  and found that this process occurs according to eq  $\alpha = \exp(-kt^2)$ , where  $\alpha$  indicates the fraction that decompd. The 2-power indicates that whole crystal facets function as reaction centers.

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U S S R .

A new topokinetic equation. P. I. Il'inskiy and B. Ya.  
Profess. Vest. Akad. Nauk SSSR. 1952, No. 4.  
116-21 (cf. preceding abstr.).—A new topokinetic equation  
is derived from the law of conservation of the kinetic energy

IEROFFEV, M. V.; MITSKEVICH, N. I.

Ammonium Nitrate

Kinetics of transformations of polymorphous modifications of ammonium nitrate. Part 2. Effect of conditions of preliminary treatment on the rate of transformations of  $\text{NH}_4\text{NO}_3$  (IV)— $\text{NH}_4\text{NO}_3$  (III). Zhur. fiz. khim. 16 No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress November 1952. Unclassified.

EROFEYEV, B. V.

USSR/Chemistry - Explosives

Jun 52

"Kinetics of Transformations of Polymorphous Modifications of Ammonium Nitrate. III. Effect of Conditions of Preliminary Treatment on the Rate of the Transformation  $\text{NH}_4\text{NO}_3 \rightarrow (\text{IV})\text{NH}_4\text{NO}_3(\text{III})$ ," B. V. Erofeyev, N.I. Mitskevich, Inst of Chem, Minsk, Acad Sci Belorussian SSR

"Zhur Fiz Khim" Vol XXVI, No 6, pp 848-861

Discusses results of the investigation of effects of drying, recrystn, and mech disintegration on the rate of transformation IV-III (cf. "Zhur Fiz Khim" Vol XXIV, 1235, 1950).

20020

YEROFYEYEV, B. V.

84p 52

USSR/Chemistry - Permanganate Potassium

"Kinetics of Thermal Decomposition of Potassium Permanganate," B. V. Yerofeyev and I. I. Smirnova, Inst of Chem, Acad Sci Belorussian SSR, Minsk

Zhur Fiz Khim, Vol 26, No. 9, pp 1233-1243

Studied the kinetics of the thermal decompn of crushed and uncrushed recrystallized  $\text{KMnO}_4$  in a temp range of  $211.5^\circ - 227.6^\circ \text{C}$ . Discovered that the decompn of  $\text{KMnO}_4$  has a typical autocatalytic character and that practically the entire range of the reaction can be quantitatively described by the Kolmogorov-Yerofeyev eq. The values of "n", in most cases, were close to four or five, thus indicating single-stage and double-stage processes in the formation of the starting centers of the reaction, which arise at separate points on the surface of the crystals. The crushing of the  $\text{KMnO}_4$  crystals did not change the general character of the kinetics of the reaction and left the value of "n" without substantial change. This led the authors to discount the theory of E. G. Prout and F. C. Tompkins (Trans. Farad Soc, Vol 40, 488, 1944).

263 T 15



USSR/Chemistry - Ammonium Nitrate

Nov 52

"Kinetics of Conversions of Polymorphous Modifications of Ammonium Nitrate: III. Kinetics of the Conversion of  $\text{NH}_4\text{NO}_3(\text{III}) \rightarrow \text{NH}_4\text{NO}_3(\text{IV})$ ", B. V. Yero-Feyev and N. I. Miskevich, Inst Chem, Acad Sci Beloruss SSR, Minsk

"Zhur Fiz Khim" Vol 26, No 11, pp 1631-1641

The authors state that the rate of conversion of  $\text{NH}_4\text{NO}_3$  modifications III  $\rightarrow$  IV, similar to the rate of conversion of IV  $\rightarrow$  III, does not depend on the repetition of the expt. The rate of conversion of

(1)

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III  $\rightarrow$  IV in expts conducted under identical conditions (of temp and time elapsed after the conversion of IV  $\rightarrow$  III) is the same, within the margins of exptl error. Protracted keeping of III at the conversion temp of IV  $\rightarrow$  III (35.0-36.00) leads to a decrease in the rate of the subsequent conversion of III  $\rightarrow$  IV. The preliminary initial heating of III at 55-600 also decreases the rate of the conversion III  $\rightarrow$  IV. The kinetics of the conversion of the modifications  $\text{NH}_4\text{NO}_3(\text{III}) \rightarrow \text{NH}_4\text{NO}_3(\text{IV})$  can be expressed by the topokinetic eq  $\alpha = 1 - \exp(-k\tau)$  throughout the whole range of the expts conducted with tested preps. Crushing the compd leads to a decrease in the rate of conversion of  $\text{NH}_4\text{NO}_3(\text{III}) \rightarrow \text{NH}_4\text{NO}_3(\text{IV})$ . The authors add that the temp dependence of the rate of conversion of the modifications  $\text{NH}_4\text{NO}_3(\text{III}) \rightarrow \text{IV}$  is not subject to the Arrhenius eq. The temp coeff of the rate of conversion III  $\rightarrow$  IV is neg.

(3)

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YEROFEEV, B.M.

REL'KEVICH, P.I.; YEROFEEV, B.V.

Mechanics of the decomposition of some solid substances by heat.  
Izv. AN SSSR, no. 1:65-74 Jan '53. (MIRA 9:1)  
(Thermochemistry)

YEROFEYEV, B. V., and MITSKEVICH, N. I.

"Cryoscopic Determination of Phenol and Ortho-Cresol in Peat Petroleum,"  
Izv. AN Belorus. SSR, No 5, pp 103-113, 1953

A tensiometric method (Yerofeyev, B.V., Uch. Zap. Kuz'vshensk. Gos. Ped. i Uchit. In-ta, 1943, No 7, 65) was used for the determination of the composition of the phenol fraction in peat petroleum (180-225 degrees). The phenol content was  $14.3 \pm 1.4\%$ ; the ortho-cresol content was  $6.2 \pm 0.5\%$ . Naphthalene was not detected. (RZhKhim, No 20, 1954)

SO: Sum, No. 606, 5 Aug 55

YEROFEEV, Boris Vasil'yevich

"Progressive Poisoning of Hydrogen Sorption in the Process of Formation of Nickel Hydrides," Dolady Akademii Nauk #494, No. 6, Vol XVII, 1953

EROFYEV, B. V.

Jan 53

USSR/Chemistry - Explosives

"Kinetics of the Conversions of Polymorphous Modifications of Ammonium Nitrate. IV. Conversion of  $\text{NH}_4\text{NO}_3(\text{III}) \rightleftharpoons \text{NH}_4\text{NO}_3(\text{II})$ ", B.V. Erofeev and N.I. Mitskevich, Inst of Chem, Acad Sci, Belorussian SSR, Minsk

Zhur Fiz Khim, Vol 27, No 1, pp 118-124

The kinetics of the polymorphous conversion of the modification III of  $\text{NH}_4\text{NO}_3$  to modification II, and the kinetics of the reverse conversions were investigated. The polymorphous conversions of the modifications of  $\text{NH}_4\text{NO}_3$ , III  $\rightleftharpoons$  II, proceed along a

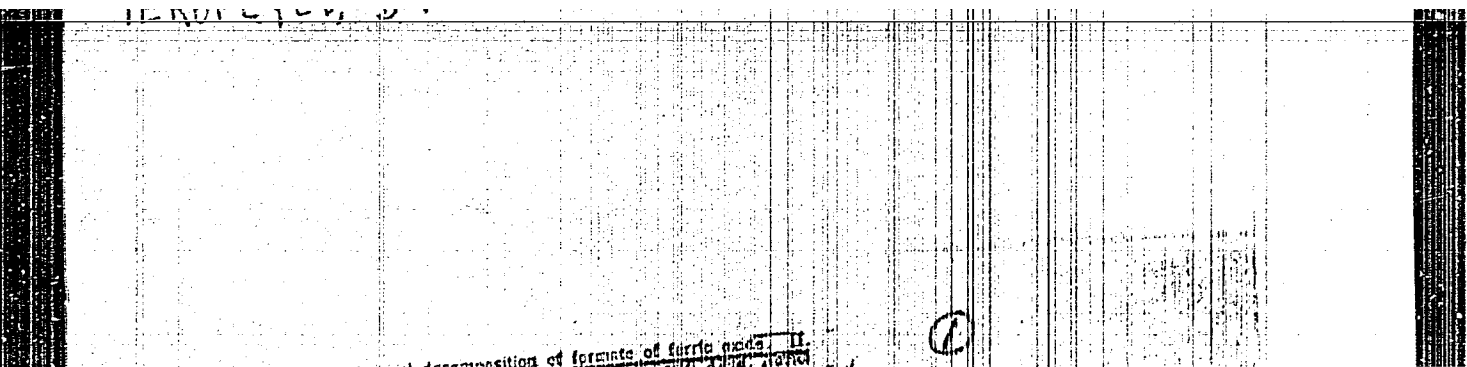
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curve of the autocatalytic type and, in general, are analogous to the previously-studied conversion IV  $\rightleftharpoons$  III. The topokinetic equation,  $Q = 1 - \exp(-kt)^n$ , adequately describes the kinetics of the conversion of the modifications of  $\text{NH}_4\text{NO}_3$ , i.e. III  $\rightleftharpoons$  II.

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"APPROVED FOR RELEASE: 03/20/2001

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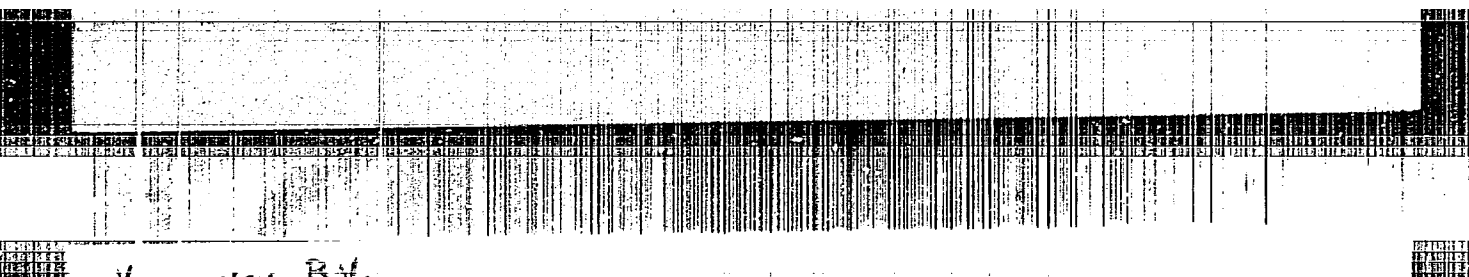


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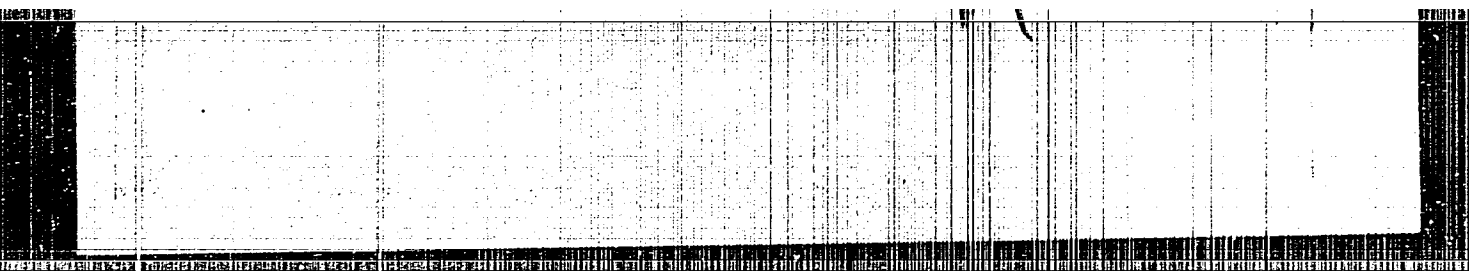


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YEROFEYEV, B. V.

USSR/Organic Chemistry - Naturally Occurring Substances and Their Synthetic Analogs,  
E-

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1034

Author: Yerofeyev, B. V., Mitskevich, N. I., and Soroko, T. I.

Institution: Academy of Sciences Belorussian SSR

Title: Conjugated Decarboxylation During the Autoxidation of Dehydroabiatic Acid

Original

Periodical: Izv. AN BSSR, 1955, No 2, 131-135 (published in Russian); Vestsi AN BSSR, 1955, No 2, 124-128 (published in Belorussian)

Abstract: It has been established that the autoxidation of dehydroabiatic acid (I) is accompanied by decarboxylation. Heating colophony (3 hours at 340°) yields the "pyroacid," which is sulfonated; acid hydrolysis of the sulfodehydroabiatic acid yields I, mp 172-173.5° (from alcohol)  $[\alpha]_D^{25} + 63.77^\circ$ . Autoxidation of I is carried out in naphthalene at 85 and 95° in the presence of Co-acetate (II) (one percent by weight based on I). The apparatus described previously (Referat Zhur - Khimiya,

Card 1/2

USSR/Organic Chemistry - Naturally Occurring Substances and Their Synthetic Analogs. E-1

Abst Journal: 1955, 51500) was used in studying the kinetics of the autoxidation. The quantity of  $O_2$  absorbed (and the rate of autoxidation) were determined by measuring the increase in weight of tubes packed with askarit through which the gas from the reaction vessel is passed; the gas is displaced by a stream of  $O_2$ . With an initial flow rate of 0.7 ml  $O_2$ /min/gm I the autoxidation of I practically stops when 0.21 moles  $O_2$ /mole I have been absorbed. Upon displacement of the gas from the reaction vessel with a stream of  $O_2$  the reaction rate increases to 0.56 ml  $O_2$ /min/gm. When an additional 90 ml of gas have been absorbed the reaction rate drops off sharply. Analysis of the gas evolved during the reaction showed the presence of 35-45%  $CO_2$ . The ratio  $CO_2:O_2$  depends on the quantity of II used and varies little during a particular experiment. The decarboxylation of I does not proceed in an atmosphere of  $N_2$ . The authors are of the opinion that 4 processes are involved in the autoxidation and decarboxylation of I: (1) formation of the hydroperoxide radical from the I radical by  $C(9)$ ; (2) formation of the I radical by the carboxyl group (III); (3) decarboxylation of III; and (4) splitting-off of one H-atom from  $C(9)$  of the new molecule of I by interaction with III.

Card 2/2

YERAFYEV, B.V.; DUBOVIK, V.I.

Activation energy in the process of thermal inactivation of  
crystallised catalase extracted from the liver of oxen. Vestsi  
AN BSSR, Ser. fiz.-tekh. nav. no. 3:31-36 '56. (MLRA 10:1)  
(Catalase) (Liver extract) (Activity coefficients)

*Yerofeyev, B. V.*

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-chemistry, Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3884.

Author : B.V. Yerofeyev, L.T. Mandzeleyev.

Inst : Academy of Sciences of White Russian SSR.

Title : Kinetics of Polymorphous Conversion of  $\alpha$ -Resorcin into  $\beta$ -Resorcin.

Orig Pub: Vestsi AN BSSR. Ser. fiz.-tekhn. n., Izv. AN BSSR. Ser. fiz.-tekhn. n., 1956, No 4, 99-110.

Abstract: The kinetics of the conversion of the low temperature modification of resorcin into its high temperature modification was studied at 72 to 100°. It is shown that the studied reaction follows the topokinetic equation  $1/(1 - a) - 1 = kt$ . The determined activation energy is 33,900 cal per mole.

Card : 1/1

-14-

YEROMIN, B.V.; MITSKEVICH, N.I.

Relationship between the rate and depth of conversion in topo-  
chemical reactions as exemplified by polymorphic conversion of  
ammonium nitrate. Sbor.nauch.rab.Inst.khim.AN BSSR no.5:3-12 '56.  
(MLRA 10:5)

(Chemical reaction, Rate of)  
(Ammonium nitrate)

~~YEROFSEY, B.V.~~ PROTASHCHIK, V.A.

Thermal decomposition kinetics of magnesium carbonate and surface  
area of the solid product (MgO). Part 1: Thermal decomposition  
kinetics of  $\text{MgCO}_3 \cdot 3\text{H}_2\text{O}$  and  $\text{MgCO}_3 \cdot 4\text{H}_2\text{O}$ . Sbor.nauch.rab.Inst.khim.  
AN BSSR no.5:58-74 3, 156. (MIRA 10:5)

(Magnesium carbonates)

(Chemical reaction, Rate of)

YEROFYEV, B.V.; PROTASCHIK, V.A.

Thermal decomposition kinetics of magnesium carbonate and surface area of the solid product (MgO). Part 2: Investigation of surface area of magnesium oxide in decomposition products of  $\text{MgCO}_3 \cdot 3\text{H}_2\text{O}$  and  $\text{MgCO}_3 \cdot 4\text{H}_2\text{O}$  by adsorption of  $\text{C}^{14}\text{O}_2$ . Sbor.nauch.rab.Inst.khim. AN BSSR no.5:75-91 '56. (MLRA 10:5)

(Magnesium carbonates)  
(Chemical reaction, Rate of)  
(Carbon--Isotopes)

YEROFYEV, B.V.; CHIRKO, A.I.

Initiators and peroxide products of  $\beta$ -carene autooxidation.  
Uch.sap. BGU no.29:15-22 '56. (MIRA 11:11)  
(Oxidation) (Carene)



YEREFYEV, B.V.; CHIRKO, A.I.

Autooxidation kinetics of 3-carene. Uch.zap. BCU no.29:3-14  
'56. (MIRA 11:11)

(Oxidation) (Carene)

YEROFEEV, B.V.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions. B-8

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 389

Author : B.V. Yerofeyev, I.T. Mendeleyev.

Inst : Academy of Sciences of White-Russian SSR.

Title : Kinetics of Phase Transformation  $\text{NH}_4\text{Br (I)} \rightleftharpoons \text{NH}_4\text{Br (II)}$ .

Orig Pub : Vestsi AN BSSR. Ser. fiz.-tekhn. n., 1957, No 1, 57-63

Abstract : The kinetics of the phase transformation  $\text{NH}_4\text{Br (I)} \rightleftharpoons \text{NH}_4\text{Br (II)}$  was investigated. It is described by the equation  $1 / (1 - \alpha) - 1 = Kt$ , where  $\alpha$  is the share of the new phase,  $K$  is constant and  $t$  is time. It is explained as a process proceeding through the formation and growth of kernels of the solid product.

Card 1/1

~~YERAFEYEV, B.V.~~  
YERAFEYEV, B.V., akademik.

Status of chemistry in the Academy of Sciences of the White  
Russian S.S.R. on the 40th anniversary of the Great October  
Revolution. Vestn AN BSSR Ser. fiz.-tekh. nav. no.3:33-42  
'57. (MIRA 11:1)

1. AN BSSR.

(White Russia--Chemistry)

YEROSHEYEV, B. V.

M.H. Pavluchenko's reply to the criticism of his concepts of the mechanism of reactions of solids. Zhur.fiz.khim. 31 no.2:505-508 F '57. (MLRA 10:7)

1. AN BSSR, Institut khimii, Minsk.  
(Chemical reaction--Mechanism) (Solids)

YEROFYEV, B.V.

"Initiation and growth of explosions in liquids and solids" by  
B.P.Boudon and A.D.Ioffe. Translated from English by A.I.Gol'binder.  
Reviewed by B.V.Yerofeyev. Zhur.fiz.khim. 31 no.4:932-933 Ap '57.

(MIRA 10:7)

(Explosions) (Boudon, B.P.) (Ioffe, A.D.)

*YEROFEEV, B. V.*

AUTHOR

Mitskevich, N. I., Soroko, T. I., Yerofeev, B. V., Academician, 20-1-12/54  
Belorussian SSR Academy of Sciences

TITLE

Conjugate decarboxylation on the autooxidation of isopropylbenzene  
in a Mixture with Fatty Acids.

PERIODICAL

(Sopryazhennoyedekarboksilirovaniye pri avtookislenni izopropil-  
benzola v smesi s zhirnymi kislotami -Russian)  
Doklady Akad.Nauk SSSR, 1957, Vol 115, Nr 1, pp 103-106 (U.S.S.R.)

ABSTRACT

It was shown by the authors in earlier papers that the low-tempera-  
re autooxydation of resinous acids is accompanied by a decarboxylation  
of these acids. In this connection it was interesting to find out whe-  
ther a conjugate decarboxylation of carbonic acids in a mixture with  
a hydrocarbon which are subject to autooxydation was possible. The  
tests made for this purpose show that an autooxydation of isopropyl-  
benzene in a mixture with acetic, butyric, isobutyric and stearic acids  
is actually accompanied by a conjugate decarboxylation. Thus the oxydat-  
ion of the hydrocarbon induces the connected decarboxylation process  
of the acid (terminology by Shilov). Since the autooxydation of hydro-  
carbons, especially at higher temperatures, may lead to the formation  
of acids capable, in the course of further autooxydation, of a conjugate  
decarboxylation, the discovery of this phenomenon is of certain inter-  
est for the understanding of the oxydation chemism of hydrocarbons in  
general. The self-acting decarboxylation of fatty acids only takes place  
at considerably higher temperatures than the conjugate decarboxyla-  
tion discovered by the authors. Ill. 1 shows that the autooxidation

Card 1/3

Conjugate Decarboxylation of the Autooxidation of Iso- 20-1-28/54  
propylbenzene in a Mixture with Fatty Acids.

speed of isopropylbenzene is about four times higher in the presence of an acid than without an acid. The initial speed was highest, then it decreased. Tab.1 shows the influence of the acid concentration on this speed. Addition of 1,04 % of isobutyric acid increases the speed more than four-fold. Further additions of acid virtually do not change the amount of oxygen absorbed at all. However, they bring about an increase in the developing  $\text{CO}_2$  more than six-fold, at a practically unchanged amount of absorbed oxygen. The test results of the oxydation of isopropylbenzene in a mixture with radioactive acetic acid (labeled on the carboxyl) confirms that the escaping  $\text{CO}_2$ , at least partly, develops at the expense of the carboxyl group of the added acid. The tests with oxydation of acetic, butyric, isobutyric and stearic acids under analogous conditions but without isopropylbenzene showed that neither an absorption of oxygen nor a formation of  $\text{CO}_2$  takes place. The small amount of  $\text{CO}_2$  escaping on this occasion probably represents a process which is connected with the autooxydation of these acids. A scheme is proposed for the conjugate decarboxylation process of organic acids with a simultaneous autooxydation of hydrocarbons. It consists of: 1. formation of the radical of isopropylbenzene peroxide, 2. interaction of this radical with the organic acid under formation of an acid radical, 3. the decarboxylation as such, 4. separation of a hydrogen atom from isopropylbenzene in the tertiary group due to interaction

Card 2/3

Conjugate Decarboxylation of the Autooxidation of Iso- 20-1-28/54  
propylbenzene in a Mixture with Fatty Acids.

with the produced radical R. This reaction leads to the regeneration of the initial radical. Thus the reactions 2 - 4 are chain-transmission reactions. It was demonstrated an induction of the kind mentioned above really takes place.

(3 illustrations, 1 table and 7 Slavic references)

ASSOCIATION Institute for Chemistry of the Academy of Sciences of the Belorussian  
(Institut khimii Akademii Nauk BSSR) SSR.  
PRESENTED BY  
SUBMITTED 12.1.1957  
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Card 3/3



YEROFEYEV, B.V.

5(3)

(p2+4)

PHASE I BOOK EXPLOITATION

SGV/1285

Akademiya nauk Belorusskoy SSR. Institut khimii

Sbornik nauchnykh rabot, vyp. 6 (Collection of Scientific Works of the Institute of Chemistry, Belorussian SSR Academy of Sciences, N. 6) Minsk, Izd-vo AN Belorusskoy SSR, 1958. 271 p. 1,100 copies printed.

Ed.: Yerofeyev, B.V., Academician, BSSR Academy of Sciences; Tech. Ed.: Volokhanovich, I.

PURPOSE: The book is intended for chemists engaged in research in specialized fields.

COVERAGE: The book is a collection of scientific articles dealing with varied subjects, such as problems in electron theory of semiconductors, catalysis, autoxidation of abiatic acid, thermodynamics of some reactions of sulfur organic compounds and reactions of alkyl, aryl, acyl-oxyl radicals in the liquid phase. Personalities are mentioned in the individual articles. There are 331 references, of which 215 are Soviet, 75 English, 30 German, 10 French, and 1 Finnish.

Card 1/5

Collection of Scientific Works (Cont.)

SOV/1285

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SOV/1285

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Card 4/5

Collection of Scientific Works (Cont.)

SOV/1285

Cherches, Kh.A. Nature of Sapinic Acid Isolated from the Resin  
of Norway Spruce

266

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3-20-59

YEROFEYEV, B.V. [Brafeeu, B.V.]; PRATASHCHYK, V.A.

Determination of surface area of magnesium oxide in a mixture  
with magnesium carbonate by chemisorption of radioactive carbon  
dioxide. Ventsi AN BSSR. Ser. fiz.-tekhn.nau. no.2:61-66 '58.  
(MIRA 11:10)

(Sorption) (Magnesium oxides) (Magnesium carbonates)

**YEROFYEV, B.V. [Brafecu, B.V.], akademik**

**Physical chemistry in the Academy of Sciences of the White  
Russian S.S.R. on the fortieth anniversary of the White Russian  
S.S.R. Vestsi AN BSSR.Ser.fiz.-tekh.nav. no.4:16-22 '58.  
(MIRA 12:4)**

**1. AN BSSR.**

**(White Russia--Chemistry, Physical and theoretical)**

YEROFEYEV, B.V.; PROTASHCHIK, V.A.

Use of Co60 in the study of contact conditions between metallic  
cobalt and its formate. Sber. nauch. rab. Inst. khim. AN BSSR  
no.6:39-46 '58. (MIRA 11:11)  
(Cobalt—Isotopes) (Cobalt formate)



MITSEVICH, N.I.; SOROKO, T.I.; YEROFEEV, B.V.

Conjugated decarboxylation in auto-oxidation of abietic acid. Sbor.  
nauch. rab. Inst. Khim. AN BSSR no.6:66-82 '58. (MIRA 11:11)  
(Oxidation) (Abietic acid)

**YEROFYEV, B.V.; NAUMOVA, S.F.**

**Thermodynamics of some reactions of sulfur-organic compounds.**  
Sbor. nauch. rab. Inst. khim. AN BSSR no.6:83-91. '58.  
(MIRA 11:11)

(Sulfur organic compounds) (Chemical reactions)

SOV/B1-59-10-37459

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, p 577 (USSR)

AUTHORS: Yerofeyev, B. V., Naumova, S.F.

TITLE: On the Inhibiting Effect of Hydroquinone on Polymerization of Methylmethacrylate

PERIODICAL: Sb. nauchn. rabot In-ta khimii AS BSSR, 1958, Nr 6, pp 190-227

ABSTRACT: The kinetics of the polymerization of methylmethacrylate in the presence of hydroquinone at 65 - 80°C has been investigated. The polymerization rate obeys the equation  $(v_0 - v_{inh}^2)/v_{inh} = (k_0'/k_0) k_p MC$  ( $v_0$  and  $v_{inh}$  are the rates of polymerization in the absence and the presence of an inhibitor,  $k_0'$ ,  $k_0$  and  $k_p$  are the constants of the rates of the rupture reactions on an inhibitor, at the interaction of two polymer radicals and the reaction of chain growth, M and C are the concentrations of the monomer and the inhibitor, respectively. A diagram of inhibition has been proposed, according to which hydroquinone breaks the reaction chain as a result of the direct interaction with the growing polymer radical with formation of ben-

Card 1/2

SOV/81-59-10-37459

On the Inhibiting Effect of Hydroquinone on Polymerization of Methylmethacrylate

zoquinone and probably semiquinone, as an intermediate product, which also break the chain. ✓

A. Pravednikov

Card 2/2

**YEROFYEV, B.V.**

Peroxide theory of A.N. Bakh in the light of modern research.  
Sbor. nauch. rab. Inst. khim. AN BSSR no.6:228-233 '58.

(MIRA 11:11)

(Oxidation)

(Chemical reaction--Conditions and laws)

79-28-5-38/69

AUTHORS: ~~Yerofeyev~~ B. V., Yemel'yanov, N. P., Naumova, S. F.

TITLE: On the Absorption Spectrum of Cyclohexadiene-1,3 Within the Range of From 220 - 300 mμ (O spektre pogloshcheniya tsikloheksadiyena-1,3 v oblasti 220 - 300 mμ)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1284 - 1286 (USSR)

ABSTRACT: The absorption spectrum of cyclohexadiene-1,3 in the ultraviolet range has been investigated in a great number of papers (References 1-3), however, the results of different authors do not coincide. In table 1 the magnitudes found by different authors for the maximum positions and the absorption coefficients are mentioned. The given data (table 1) show that the results of different authors who investigated the absorption spectrum of cyclohexadiene-1,3 in the ultraviolet range do first of all not coincide with respect to the number of maxima on the absorption curve. It is possible that this deviation of the data of some scientists is based on the insufficient purity of the investigated product. In connection with this the authors

Card 1/2

79-28-5-38/69

On the Absorption Spectra of Cyclohexadiene-1,3 Within the Range of From  
220 - 300 mμ

took the absorption spectrum of cyclohexadiene-1,3 in the ultraviolet range. The product was synthesized in the Laboratory for Technical Analysis of the Institute for Chemistry of the AS USSR and therefore can be looked upon as a purer compound than that of the other scientists. Thus the absorption spectrum of cyclohexadiene-1,3 has, contrary to earlier data, only one maximum within the ultraviolet range (220 - 300 mμ) which, as regards its vapors, comes to lie on 250.5 mμ (Lgε 3.73) and, as regards its solutions in hexane and alcohol, on 258 mμ (Lgε 4.00). There are 2 figures, 2 tables and 3 references, none of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Belorusskoy SSR (Institute for Chemistry, AS Belorussian SSR)

SUBMITTED: April 29, 1957

Card 2/2

YEROFYEV, B.V.; MITSKEVICH, N.I.

Effect of the phase conversion  $\text{NH}_4\text{NO}_3$  (IV)  $\rightarrow$   $\text{NH}_4\text{NO}_3$  (III) on the  
caking of ammonium nitrate. Zhur.prikl.khim. 31 no.12:1805-1809  
1958. (MIRA 12:2)

1. Institut khimii AN BSSR.  
(Ammonium nitrate)



YEROFEYEV, B.V.

Contemporary ideas on the chemism of autooxidation reactions. Uch.zap.  
BGU no.42:53-64 ' 58. (MIRA 12:1)  
(Oxidation)

**YEROFYEV, B.V.; CHIRKO, A.I.; TERENT'YEVA, Yu.M.**

Investigating the products of the autooxidation of cyclohexylbenzene.  
Uch.zap.BGU no.42:127-137 '58. (MIRA 12:1)  
(Cyclohexane)

LIPETSKER, Mikhail Semenovich; YEROFEEV, Boris Vladimirovich; TVERDOV,  
A.A., red.; ASTAKHOVA, I.V., tekhn.red.

[Land utilisation in cities, workmen's settlements, summer and  
health resorts] Zemlepol'sovanie v gorodakh, rabochikh, dachnykh  
i kurortnykh poselkakh. Moskva, Gos.izd-vo iurid.lit-ry, 1959.  
285 p. (MIRA 13:5)

(Land)

(City planning)



YEROFEEV, B.V.[Brafecu, B.V.]; MARDYKIN, V.P.

Products of the reaction of  $\text{RMgX}$  and  $\text{H}_2$  in the presence of  
 $\text{NiCl}_2$  and  $\text{NiBr}_2$ . Vestsi AN BSSR.Ser.fil.-tekh.nav. no.2:49-55  
'59.<sup>2</sup> (MIRA 12:11)  
(Magnesium) (Nickel compounds)

YEROFEYEV, B.V.

Classification of complex reactions, including that of catalytic  
processes. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR  
no. 7:3-12 '59. (MIRA 14:4)  
(Chemical reactions) (Catalysis)

01000

S/081/60/000/023/002/021  
A005/A001

11.6 200 also 2209

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 23, p. 65, # 91636

AUTHOR: Yerofeyev, B.V.

TITLE: On the Nature of Autocatalysis in Reactions of Solid Substances

PERIODICAL: Sb. nauchn. rabot. In-t fiz.-organ. khimii AN BSSR, 1959, No. 7, pp. 13 - 22

TEXT: The possible reasons are considered of self-acceleration in topo-chemical reaction processes: self-heating, self-disintegration of crystals during the reaction, chain mechanism and catalytic action of the reaction product. On the basis of experimental materials (Yerofeyev, B.V., et al., Izv. AN BSSR, 1950, No. 5, p. 145) and the works of other investigators, the author concludes that the catalytic action of the solid product is the main reason of self-acceleration. The mechanism of the catalytic action of the solid product consists, in the author's opinion, in the formation, in the course of the reaction, of a boundary layer with an altered electron concentration in the interface between the initial substance and the reaction product.

Translator's note: This is the full translation of the original Russian abstract.  
V. Boldyrev  
Card 1/1

YEROFEYEV, B.V.; PAVLYUCHENKO, K.V.

Kinetics of the thermal destruction of amylases. Report No.2.  
Sbor. much. rab. Inst. fiz.-org. khim. AN BSSR no. 7:103-109  
'59. (MIRA 14:4)  
(Amylase)



YEROFYEV, B.V.; NAUMOVA, S.F.; TSYKALO, L.G.; ZHAVNERKO, K.A.

Polymerization of 1,3-cyclohexadiene. Dokl. AN BSSR 3 no.3:95-99  
№ '59. (MIRA 12:8)

(Cyclohexadiene)

YEROFEEV, B.V.; CHIRKO, A.I.; TERENT'YEVA, Yu.N.

Kinetics of liquid-phase autoxidation of phenylcyclohexane.  
Dokl. AN BSSR 3 no.6:244-248 Je '59. (MIRA 12:10)  
(Hexane) (Oxidation)

YEROFEEV, B. V. and NIKIFOROVA, N. V.

"The Catalytic Change of Chyclohexine on Copper and Multiplet Theory."

report submitted for the Second International Congress on Catalysis, Paris, 4-9 Jul 60.

YEROFEEV, B. V.

"Reaction Rate of Processes Involving Solids With Different Specific Surfaces."

report submitted for 4th Intl. Symposium on the Reactivity of Solids, Amsterdam, 30 May - 4 June 1960.

YEROFYEV, B. V., PROTASHCHIK, V. A.,

60  
"The effect of the Co Admixture on the Thermal Decomposition Rate of Cobalt  
Formate."

Paper presented at the "Symposium on the Chemical Effects of Transformations"  
Prague, Czech., 24-27 October 1960, sponsored by the IAEA.

YEROFEYEV, B.V.

LATYSHEV, G.D.

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PHASE I BOOK EXPLOITATION SOV/5410

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Tashkent, 1959.

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Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babakhanova.

PURPOSE : The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

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instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

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S/081/61/000/013/004/028  
B105/B201

AUTHOR: Yerofeyev B. V.

TITLE: Kinetics of low-temperature oxidation of terpenes and related hydrocarbons

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1961, 70, abstract 13E513 (Vopr. khimii terpenov i terpenoidov. Vil'nyus, 1960, 103 - 111)

TEXT: On the basis of a study of the chain mechanism of auto-oxidation of unsaturated hydrocarbons (RH), which includes the initiation of the chains during the interaction of RH with a metal salt (MX<sub>2</sub>) according to the reactions  $RH + MX_2 \rightarrow R\cdot + MX + HX$  (1) and  $RH + MX \rightarrow M + R\cdot + HX$  (2), and from the reaction of chain growth and rupture, the author concludes that the oxidation rate V is proportional to  $[RH]^2$  and  $1/V$  to the quantity  $1/[MX_2]$ . The latter function was observed during the oxidation of  $\Delta^3$ -p-menthene. For phenyl cyclohexane V is proportional to  $[RH]^5$ . In order to explain this

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B105/B201

Kinetics of low-temperature...

fact, the author considers the initiation of the formation of the complex  $[M(RH)_z]X_2$  (I) to be the first stage and assumes that, according to the structure of RH, the nature of the initiator, and the experimental conditions, the initiation proceeds either according to reactions (1) and (2), or to the reactions  $zRH + MX_2 \rightarrow I$  and  $I \rightarrow 2R' + M + (z - 2)RH + 2HX$ , which leads to different dependences of  $V$  on  $[RH]$ . [Abstracter's note: Complete translation.]

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YEROFAYEV, B.V. [Yerofayev, B.V.]; CHIRKO, A.I. [Chyrko, A.I.]

Dimer products of the autoxidation of unsaturated hydrocarbons.  
Vestsi AN BSSR. Ser. fiz.-tekh. nav. no. 1:51-56 '60. (MIRA 13:6)  
(Hydrocarbons) (Polymers) (Oxidation)

YEROFEEV, B.V. [Erafecu, B.V.]; KLYUYEV, Yu.P. [Kliueu, IU.P.]

Studying the mechanism of transformation of  $\alpha$ -pinene under the influence of orthophosphoric acid applied to activated birch charcoal. Vestsi M BSSR. Ser. Fiz.-tekh. nav. no. 4:29-41 (MIRA 14:1)

'60.

(Pinene)

(Phosphoric acid)

S/081/61/000/021/093/094  
B106/B203

AUTHORS: Yerofeyev, B. V., Naumova, S. F., Kulevskaya, I. V.

TITLE: Initiation of ethylene polymerization by a complex of etherates of Grignard compounds and titanium tetrachloride

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 507, abstract 21B55. (Sb. nauchn. rabot. In-t Fiz.-organ. khimii AN BSSR, no. 8, 1960, 80 - 82)

TEXT: It was shown that etherates of butyl magnesium bromide and phenyl magnesium bromide synthesized in anisole at 100 - 120°C formed an active catalyst with  $TiCl_4$  for the polymerization of ethylene. The polymer yield was doubled when increasing the ratio  $RMgX : TiCl_4$  from 1.4 to 1.7. Etherates containing  $(C_2H_5)_2O$  did not form an active catalyst with  $TiCl_4$ .  
[Abstracter's note: Complete translation.]

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S/081/61/000/021/094/094  
B106/B203

53830

AUTHORS: Shlyk, V. G., Yerofeyev, B. V.

TITLE: Initiation of polymerization by systems of salts of transition metals and peroxide compounds

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 507, abstract 21H57 (Sb. nauchn. rabot. In-t Fiz.-organ. khimii AN BSSR, no. 8, 1960, 83 - 87)

TEXT: The initiation of polymerization of methyl methacrylate and styrene by systems of cumene hydroperoxide (I) and manganese stearate (II) was examined. The kinetics of this process was gravimetrically studied. The rate of polymerization in vacuum at 60°C in the presence of I is directly proportional to the square root of the concentration of I. Additions of II at first increase the rate of polymerization of both monomers. Then, a limiting concentration of II is reached, and further additions of II do not affect the rate of polymerization any longer. It was concluded that initiation did not proceed according to a redox mechanism. II probably does not react with I but with a certain intermediate, the con-

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S/081/61/000/021/094/094

B106/B203

Initiation of polymerization by systems....

centration of which is considerably lower than that of II. Replacement of the radicals forming in thermal decomposition of I by radicals of stearate II is possible. As to the rate of polymerisation, these radicals are more active than the radicals initially forming in decomposition of I. X

[Abstracter's note: Complete translation]

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YEROFEEV, B.V.; MITSKEVICH, N.I.; MAYOROVA, M.V.

Initiation of decarboxylation by anthracene. Sbor. nauch. rab.  
(Inst. fiz.-org. khim. AN BSSR no. 8:93-98 60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.  
(Anthracene) (Carboxyl group)

ARIKO, N.G.; YIROFYEYEV, B.V.

Effect of saturated carboxylic acids on the rate of cyclohexene  
oxidation. Sbor.nauch. rab. Inst. fiz.-org.khim. AN BSSR no.8:155-  
160 '60. (MIRA 14 3)

1. Belorusskiy gosudarstvennyy universitet.  
(Acids, Organic) (Cyclohexene) (Oxidation)

S/081/61/000/022/019/076  
B102/B108

AUTHORS: Yerofeyev, B. V., Ushakhina, N. A.  
TITLE: Inhibited self-oxidation of cyclohexanone  
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1961, 146, abstract  
22Zh33 (Sb. nauchn. rabot. In-t Fiz.-organ. khimii AN BSSR,  
no. 8, 1960, 161-167)  
TEXT: It is shown that, owing to its effect on the initiation process,  
hydroquinone decelerates the oxidation of cyclohexanone (85-95°C) as  
initiated by cobalt acetate. Activation energy with respect to reaction  
rate is 21,600 cal, with respect to the induction period 23,900 cal,  
which values are almost equal. Consequently, the activation energy of the  
process coincides with the activation energy of the initiation period.  
[Abstracter's note: Complete translation.]

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S/170/60/003/012/014/015  
B019/B056

AUTHORS: ~~Yerofeyev, B. V.~~, Academician of the AS BSSR, Troyer, V. N.,  
Corresponding Member of the AS BSS, Franyuk, V. A.,  
Candidate of Physical and Mathematical Sciences

TITLE: Nikolay Sergeevich Akulov (On the Occasion of His 60th  
Birthday)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 12,  
pp. 119-122

TEXT: On September 12, 1960, Academician of the AS BSSR, Professor  
N. S. Akulov was 60. He looks back upon a 35 years' activity as head of  
the Laboratory of Problems of Physics of the FTI AS BSSR. Akulov finished  
high school in 1919, 1920 he joined the Red Army, and, after having been  
demobilized in 1921, he began to study at the khimicheskii fakul'tet  
Kubanskogo politekhnicheskogo institut (Chemical Department of the Kuban  
Polytechnic Institute). From 1922 onward he studied at the fiziko-  
matematicheskii fakul'tet (Department of Physics and Mathematics) at  
Moscow. Under the guidance of Professor M. A. Izgaryshov he studied the

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